

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (CURRENTLY AMENDED) A method in a telecommunication system for allowing a SIM-based authentication to users of a wireless local area network who are subscribers of a public land mobile network, the method comprising ~~the steps of:~~

(a) a wireless terminal accessing the wireless local area network through an accessible Access Point;

(b) discovering an Access Controller interposed between the Access Point and the public land mobile network from the wireless terminal;

(c) carrying out a challenge-response authentication procedure between the wireless terminal and the public land mobile network through the Access Controller, the wireless terminal provided with a SIM card and adapted for reading data thereof;

~~the method characterized in that~~ wherein the challenge-response authentication submissions in step (c) take place before having provided an IP connectivity to the user, and are carried:

- on top of a Point-to-Point layer 2 protocol (PPPoE) between the wireless terminal and the Access Controller; and

- on an authentication protocol residing at an application layer between the public land mobile network and the Access Controller; and

the method further ~~comprises a step of~~ comprising:

(d) offering the IP connectivity to the user at the wireless terminal, by sending an assigned IP address and other network configuration parameters, once said user has been validly authenticated by the public land mobile network.

2. (CURRENTLY AMENDED) The method in claim 1, wherein the step (b) ~~of discovering an Access Controller~~ includes a step of establishing a Point-to-Point Protocol session between a Point-to-Point over Ethernet (PPoE) Protocol client in the wireless terminal and a Point-to-Point over Ethernet (PPoE) Protocol server in the Access Controller.

3. (CURRENTLY AMENDED) The method in claim 1, wherein the step (c) ~~of carrying out the challenge response authentication procedure include the steps of~~ includes:

(c1) sending a user identifier from the wireless terminal to the public land mobile network through the Access Controller;

(c2) receiving an authentication challenge at the wireless terminal from the public land mobile network via the Access Controller;

(c3) deriving encryption key and authentication response at the wireless terminal from the received authentication challenge;

(c4) sending the authentication response from the wireless terminal to the public land mobile network through the Access Controller;

(c5) receiving at the Access Controller an encryption key from the public land mobile network; and

(c6) extracting the encryption key received for further encryption of communication path with the wireless terminal.

4. (CURRENTLY AMENDED) The method in claim 2, further comprising ~~the step~~ of shifting authentication information received on top of ~~a~~ the Point-to-Point layer 2 protocol upwards to ~~an~~ the authentication protocol residing at the application layer for submissions toward the public land mobile network.

5. (CURRENTLY AMENDED) The method in claim 4, further comprising ~~the step~~ of shifting authentication information received on ~~an~~ the authentication protocol residing at the application layer downwards on top of ~~a~~ the Point-to-Point layer 2 protocol for submissions toward the wireless terminal.

6. (CURRENTLY AMENDED) The method in claim 3, further comprising ~~the step~~ of establishing at the wireless terminal a symmetric encryption path by using the previously derived encryption keys at the Access Controller and the wireless terminal.

7. (CURRENTLY AMENDED) The method in claim 1, wherein the step (d) ~~of sending an IP address~~ includes a previous step of requesting ~~such~~ the assigned IP address from a Dynamic Host Configuration Protocol server.

8. (CURRENTLY AMENDED) The method in claim 1, wherein the communication between the Access Controller and the public land mobile network goes through an Authentication Gateway of said public land mobile network.

9. (CURRENTLY AMENDED) The method in claim 1, wherein the communication between the Access Controller and ~~the~~an Authentication Gateway of ~~a~~the public land mobile network goes through an Authentication Server of the wireless local area network in charge of authenticating local users of said wireless local area network who are not mobile subscribers.

10. (CURRENTLY AMENDED) The method of claim ~~1~~3, wherein the user identifier in step (c1) comprises a Network Access Identifier.

11. (CURRENTLY AMENDED) The method in claim ~~1~~3, wherein the user identifier in step (c1) comprises an International Mobile Subscriber Identity.

12. (CURRENTLY AMENDED) The method in claim 1, wherein the authentication protocol residing at the application layer in step (c) is an Extensible Authentication Protocol.

13. (CURRENTLY AMENDED) The method in claim 12, wherein ~~this~~the Extensible Authentication Protocol is transported over a RADIUS protocol.

14. (CURRENTLY AMENDED) The method in claim 12, wherein ~~this~~the Extensible Authentication Protocol is transported over a Diameter protocol.

15. (CURRENTLY AMENDED) An Access Controller in a telecommunication system that comprises a wireless local area network including at least one Access Point, a public land mobile network, and at least one ~~Terminal Equipment~~wireless terminal provided with a

SIM card and adapted for reading subscriber data thereof, the Access Controller ~~characterized in that it comprises~~ comprising:

(a) — a Point-to-Point layer 2 protocol (PPPoE) server for communicating with the wireless terminal over a PPPoE protocol, ~~and the PPPoE server being arranged for tunneling the~~ a challenge-response authentication procedure; and

(b) — an authentication client protocol residing at an OSI application layer for communicating with the public land mobile network, wherein the authentication client is configured to implement an authentication protocol residing at an application layer,

wherein the Access Controller is configured to send an assigned IP address and other network configuration parameters to the wireless terminal to provide IP connectivity after the challenge-response authentication procedure is successfully carried out between the wireless terminal and the public land mobile network in the telecommunication system.

16. (CURRENTLY AMENDED) The Access Controller in claim 15 ~~further comprising~~, wherein

(a) — ~~means for shifting the~~ wherein the authentication client is configured to shift information received on top of the Point-to-Point layer 2 protocol upwards to the authentication protocol residing at the application layer; and

(b) — ~~means for shifting the~~ wherein the PPPoE server is configured to shift information received on the authentication protocol residing at the application layer downwards on top of the Point-to-Point layer 2 protocol (PPPoE).

17. (CURRENTLY AMENDED) The Access Controller in Claim 16 ~~further comprising means wherein the Access Controller is adapted~~ for requesting IP address from a Dynamic Host Configuration Protocol server, after a user has been successfully authenticated by his public land mobile network.

18. (CURRENTLY AMENDED) An Access Controller according to claim 17, wherein the Access Controller is adapted for communicating with a~~the~~ wireless terminal via an Access Point.

19. (CURRENTLY AMENDED) An Access Controller according to claim 17, wherein the Access Controller is adapted for communicating with a~~the~~ public land mobile network via an Authentication Gateway.

20. (CURRENTLY AMENDED) An Access Controller according to claim 17, wherein the Access Controller is adapted for communicating with an Authentication Gateway via an Authentication Server responsible for authenticating local users of a~~the~~ wireless local area network.

21. (CURRENTLY AMENDED) An Access Controller according to claim 15, wherein the authentication protocol residing at the application layer is an Extensible Authentication Protocol.

22. (CURRENTLY AMENDED) The Access Controller in claim 21, wherein ~~this~~ the Extensible Authentication Protocol is transported over a RADIUS protocol.

23. (CURRENTLY AMENDED) The Access Controller in claim 21, wherein ~~this~~ the Extensible Authentication Protocol is transported over a Diameter protocol.

24. (CURRENTLY AMENDED) A wireless terminal capable of carrying out a challenge-response authentication procedure, the wireless terminal comprising functionally for acting as a client configured to act as a Point-to-Point layer 2 protocol (PPPoE) client,
wherein ~~and having~~ an Extensible Authentication Protocol is carried on top of ~~this a~~ Point-to-Point layer 2 protocol, and
wherein the wireless terminal is configured to receive an IP address after successfully carrying out the challenge-response authentication procedure, the IP address being usable to gain IP connectivity.

25. (CURRENTLY AMENDED) A telecommunication system comprising:
a wireless local area network that includes
at least one Access Point,
a public land mobile network, ~~and~~
at least one ~~Terminal Equipment~~ wireless terminal provided with a SIM card and adapted for reading subscriber data thereof, and

~~characterized in that it further comprises~~ the Access Controller in claim 15 for
allowing SIM-based subscriber authentication to users of the wireless local area network
who are subscribers of the public land mobile network.